CLAIMS

1. A micromachine comprising:

an output electrode which is patterned on a substrate;

an interlayer insulating film which covers said substrate and includes an opening whose bottom is said output electrode; and

a beltlike resonator electrode so formed on said interlayer insulating film as to traverse above the space in said opening,

wherein said resonator electrode is concave toward said opening along the side wall of said opening.

2. The micromachine as defined in Claim 1, wherein the resonator electrode is formed in such a way that the surface of the part concave toward the opening is lower than the surface of the interlayer insulating film.

3. The micromachine as defined in Claim 1, wherein both ends of the resonator electrode, which are at both sides of the opening, are held between the interlayer insulating film and an insulating film formed on the interlayer insulating film.

4. The micromachine as defined in Claim 1, wherein the resonator electrode is so arranged as to close the opening and includes a hole communicating with the space

in the opening.

5. The micromachine as defined in Claim 1, wherein the output electrode is embedded in the interlayer insulating film.

6. A micromachine comprising:

an output electrode which is patterned on a substrate;

an interlayer insulating film which covers said substrate and includes an opening whose bottom is said output electrode; and

a beltlike resonator electrode so formed on said interlayer insulating film as to traverse above the space in said opening,

wherein both ends of the resonator electrode, which are at both sides of the opening, are held between the interlayer insulating film and an insulating film formed on the interlayer insulating film.

7. The micromachine as defined in Claim 6, wherein the resonator electrode is so arranged as to close the opening and includes a hole communicating with the space in the opening.

8. The micromachine as defined in Claim 6, wherein the output electrode is embedded in the interlayer insulating film.

9. A method for producing a micromachine comprising:

a first step of patterning an output electrode on a substrate and forming on said substrate an interlayer insulating film including an opening whose bottom is said output electrode;

a second step of forming at the bottom of said opening a sacrificial layer whose surface is lower than the surface of said interlayer insulating film so as to cover the surface of the output electrode at the bottom of the opening by the sacrificial layer;

a third step of patterning a beltlike resonator electrode on said sacrificial layer and said interlayer insulating layer in such a way that the beltlike resonator electrode is concave toward said opening along the inner wall of said opening, said beltlike resonator electrode traversing above said sacrificial layer while allowing a part thereof to be exposed; and

a fourth step of selectively removing said sacrificial layer in said opening, thereby forming a space between said output electrode and said resonator electrode.

10. A method for producing a micromachine comprising:

a first step of patterning an output electrode on a substrate and forming on said substrate an interlayer insulating film including a first opening whose bottom is said output electrode;

a second step of covering with a sacrificial layer the surface of said output electrode as the bottom of said first opening;

a third step of patterning a beltlike resonator electrode on said sacrificial layer and said interlayer insulating layer, said beltlike resonator electrode traversing above said sacrificial layer while allowing a part thereof to be exposed;

a fourth step of forming an insulating film on said interlayer insulating film in such a way that the insulating film covers said resonator electrode and forming a second opening in said insulating film so that said resonator electrode and said sacrificial layer are exposed; and

a fifth step of selectively removing said sacrificial layer in said first opening through said second opening, thereby forming a space between said output electrode and said resonator electrode.